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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GE, YUZHEN	
ART UNIT	PAPER NUMBER
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,277	FERMAN, A. MUFIT	
	Examiner	Art Unit	
	Yuzhen Ge	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 September 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because there should be an arrow from 150 to 110 in Fig. 3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. Claims 1-17, 20, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Benati et al (US Patent 5,748,764, cited by IDS).

Regarding claims 1, 7 13, 20, and 23, Benati et al teach a method to identify sub-regions of a multi-channel image as containing red-eye comprising:

converting and providing said multi-channel image to a modified multi-channel image wherein at least one of said channels is an enhanced luminance channel that has more than 60% of the luminance information of said multi-channel image (col. 3, lines 46-62, col. 4, lines 17-28, col. 5, lines 43-57, col. 8, lines 44-63, the lightness channel contains 100% luminance and therefore contains greater than 60% of the luminance information); and

identifying a sub-region of said image as containing a red-eye region based upon, at least in part, processing said enhanced luminance channel (col. 3, lines 50-53, col. 5, lines 17-27, col. 5, lines 43-60);

identifying said sub-region of said image as containing a red-eye region based upon, at least in part, processing another one of said multi-channel image (col. 3, lines 50-53, col. 4, lines 17-27, col. 4, lines 17-27, col. 5, lines 43-60, col. 8, lines 40-67);

providing said multi-channel image wherein at least one of said channels substantially includes the hue of said image (col. 3, lines 46-62, col. 4, lines 17-28, col. 5, lines 43-57, col. 8, lines 44-67);

identifying a sub-region of said image as containing a red-eye region based upon, at least in part, processing said channel that substantially includes said hue (col. 3, lines 46-62, col. 4, lines 17-27, col. 5, lines 43-60, col. 8, lines 40-67);

providing said multi-channel image wherein at least one of said channels substantially includes the saturation of said image (col. 3, lines 46-62, col. 4, lines 17-28, col. 5, lines 43-57, col. 8, lines 44-67);

identifying a sub-region of said image as containing a red-eye region based upon, at least in part, processing said channel that substantially includes said saturation (col. 3, lines 50-53, col. 4, lines 17-27, col. 5, lines 43-60, col. 8, lines 40-67).

Regarding claim 2, Benati et al teach the method of claim 1 wherein said multi-channel image has red, green, and blue channels (col. 4, lines 17-20, col. 8, lines 40-63).

Regarding claims 3 and 8, Benati et al teach the method of claim 2 and claim 7 wherein said modified multi-channel image has hue, saturation, and intensity channels (col. 4, lines 17-20, col. 8, lines 40-63).

Regarding claims 4 and 9, Benati et al teach the method of claim 3 and 8 wherein saturation is the relative bandwidth of the visible output from a light source (col. 4, lines 39-45, inherent from the definition of saturation).

Regarding claims 5 and 10, Benati et al teach the method of claim 4 and claim 7 wherein said hue is substantially the wavelength within the visible-light spectrum at which the energy output from a source is the greatest (col. 4, lines 39-45, inherent from the definition of hue).

Regarding claims 6 and 11, Benati et al teach the method of claim 1 and 7 wherein each channel of said multi-channel image is processed differently to identify said sub-region of said image (col. 4, lines 18-27, col. 5, lines 43-67, col. 8, lines 40-67).

Regarding claim 12, Benati et al teach a method to identify sub-regions of a multi-channel image containing red-eye comprising:

(a) identifying a sub-region of said image as containing a red-eye region based upon, at least in part, different processing each of said channels of said multi-channel image (col. 3, lines 50-53, col. 5, lines 17-27, col. 4, lines 18-27, col. 5, lines 43-67, col. 8, lines 40-67).

Regarding claim 14, Benati et al teach the method of claim 13 wherein said identifying based upon said luminance information includes thresholding said luminance information (col. 2, lines 10-15, col. 4, lines 17-27, col. 5, lines 43-67, col. 6, lines 1-7, Figs. 6a-6c).

Regarding claim 15, Benati et al teach the method of claim 14 wherein the result of said thresholding is a first mask (col. 4, lines 17-39, Fig. 9, col. 7, lines 36-51).

Regarding claim 16, Benati et al teach the method of claim 14 wherein the value for said thresholding is based upon said image (col. 4, lines 17-39, Fig. 9, col. 7, lines 36-51, the said image value are used to compare with thresholds during thresholding).

Regarding claim 17, Benati et al teach the method of claim 15 further comprising reducing the number of isolated pixels indicated within said image as a red-eye region (col. 6, lines 16-53).

Regarding claim 22, Benati et al teach the method of claim 20 wherein said sub-region is identified based upon at least one of (1) its area, (2) is aspect ratio, and (3) its extent (col. 2, lines 29-32, col. 5, lines 1-21, the area and shape and eccentricity are used, also eccentricity is equivalent to aspect ratio).

Claim Rejections - 35 USC § 103

3. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benati et al in view of Liang et al (US Patent 6,678,413 B1).

Regarding claim 18, Benati et al teach the method of claim 17. However they do not teach the method comprising using a convex hull technique to identify contiguous regions. Liang et al teach a method comprising using a convex hull technique to identify contiguous regions when segmenting and identifying an object (col. 17, line 53-col. 18, line 6). It is desirable to represent and characterize an object by known techniques. Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the convex hull method of Liang et al to represent and identify contiguous regions in the method of Benati et al.

Regarding claim 19, Benati et al and Liang et al teach the method of claim 18. Benati et al further teach wherein contiguous regions of insufficient size are removed as potential red-eye regions (Fig. 7, col. 5, lines 1-21).

Claim Rejections - 35 USC § 103

4. Claims 21 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benati et al in view of Takaoka (US Patent 6,798,903 B2).

Regarding claim 21, Benati et al teach the method of claim 20. However they do not explicitly teach wherein said red-eye region is based upon identifying a lighter region generally surrounded by a darker region. In the same field of endeavor, Takaoka teaches red-eye region is based upon identifying a lighter region generally surrounded by a darker region (col. 16, lines 50-67, Figs. 4A-4C and 5-6, col. 18, lines 1-23). It is desirable to determine possible red-eye area based on characteristic amount and based on the characteristic of the red-eye artifacts (col. 16, lines 39-49 of Takaoka). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Takaoka to identify a red-eye region based upon identifying a lighter region generally surrounded by a darker region.

Regarding claim 24, Benati et al teach the method of claim 23. However they do not explicitly teach wherein said re-eye region is based upon identifying location variations in said saturation. In the same field of endeavor, Takaoka teaches said re-eye region is based upon identifying location variations in said saturation (col. 3, lines 35-52, col. 16, line 47-col. 17, line 62). It is desirable to determine possible red-eye area based on characteristic amount and based on the characteristic of the red-eye artifacts (col. 16, lines 39-49 of Takaoka). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Takaoka to identify a red-eye region based upon location variations in said saturation.

Regarding claim 25, Benati et al and Takaoka teach the method of claim 24. Takaoka further teaches wherein said location variations is based upon a statistical measure (col. 3, lines 35-52, col. 16, line 47-col. 17, line 62).

Regarding claim 26, Benati et al and Takaoka teach the method of claim 25. Takaoka further teaches wherein said statistical measure is a standard deviation (col. 21, lines 40-55, col. 20, lines 35-52, the difference of a value and average value of the saturation is the standard deviation, correction is done based on a standard deviation and it is implicit that identification can be done with a standard deviation).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuzhen Ge whose telephone number is 571-272 7636. The examiner can normally be reached on 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yuzhen Ge
Examiner
Art Unit 2624

WENPENG CHEN
PRIMARY EXAMINER

2/1/07